CIPE
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PATENT

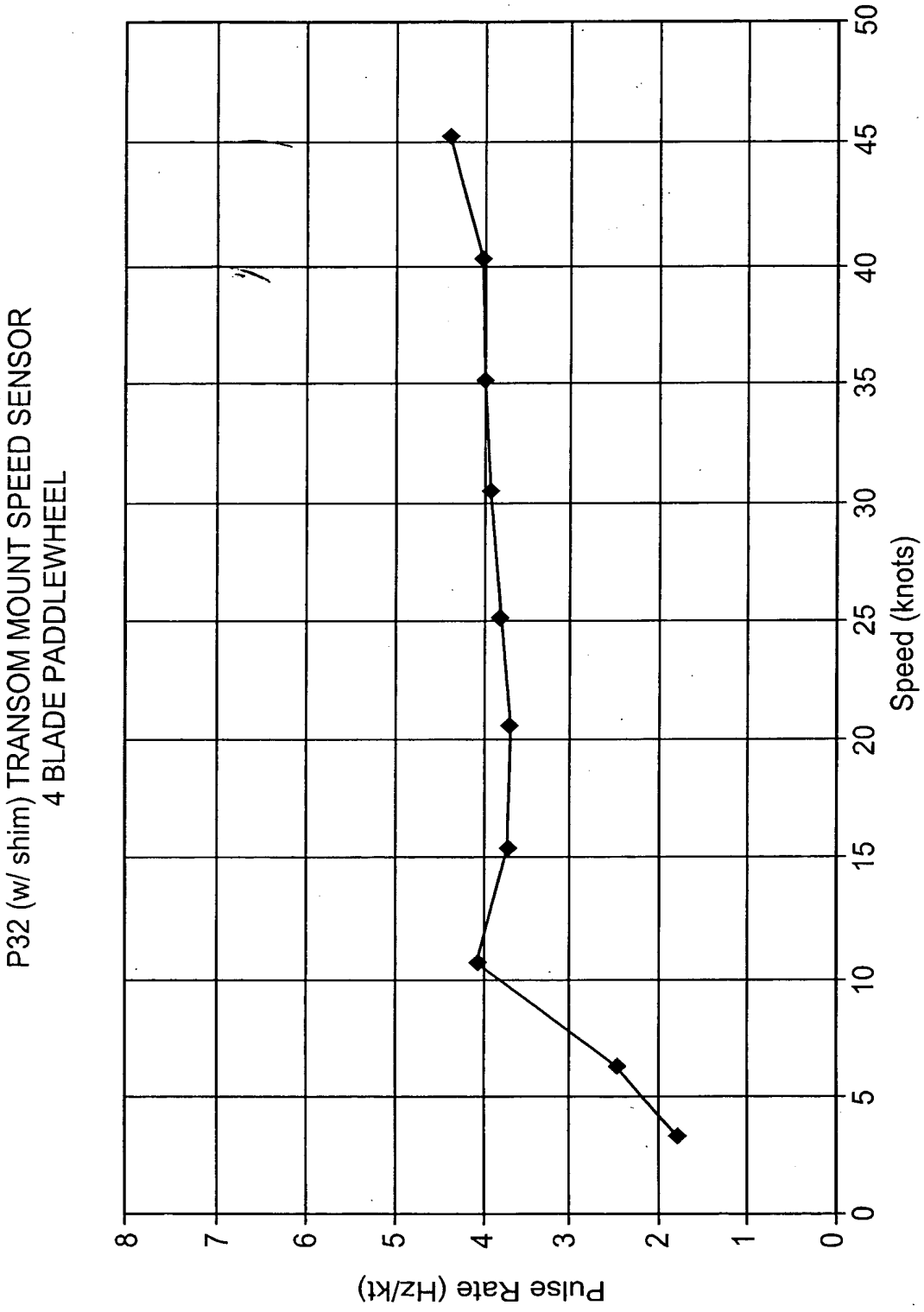


FIG. 1

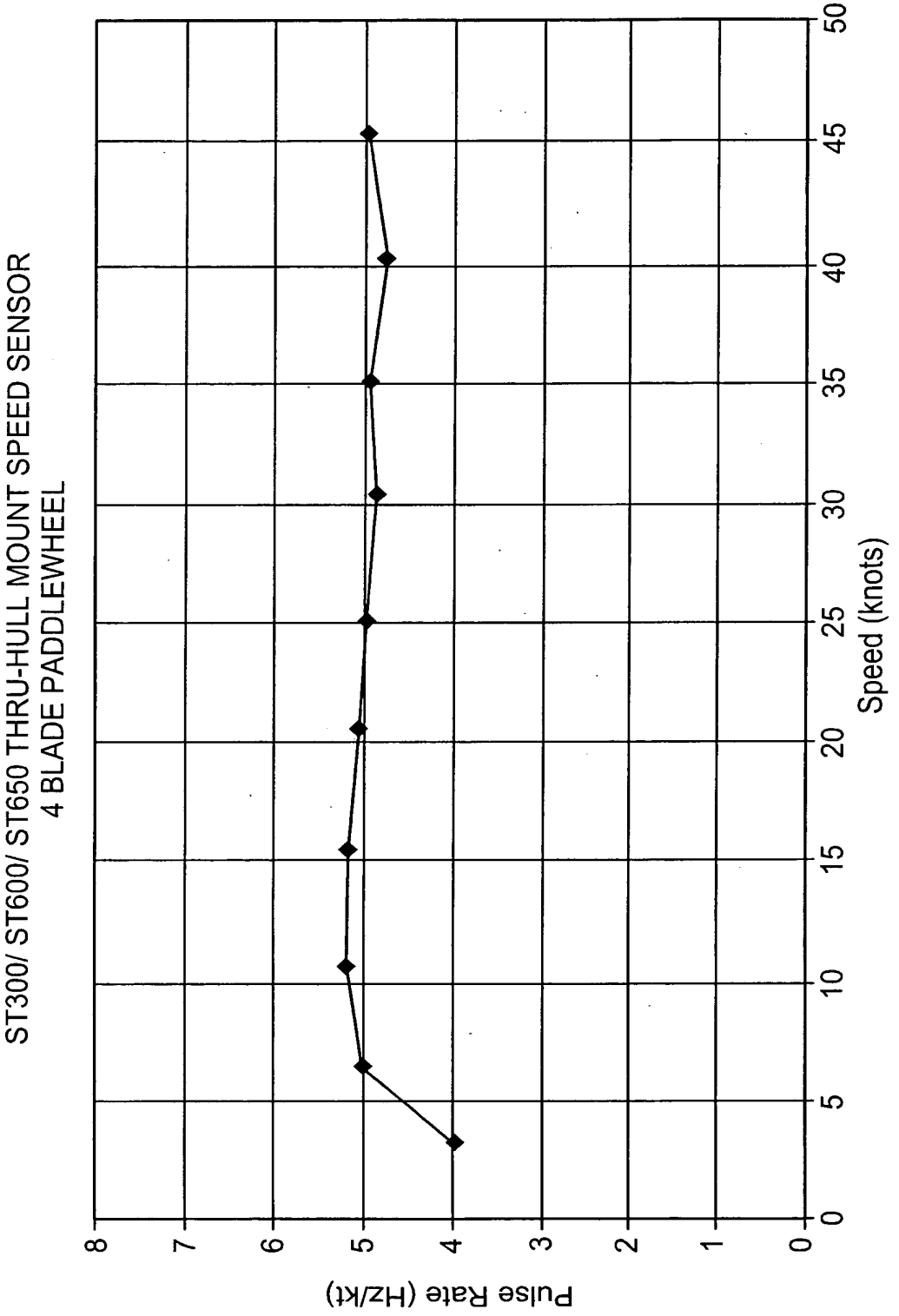

ST300/ ST600/ ST650 THRU-HULL MOUNT SPEED SENSOR
4 BLADE PADDLEWHEEL
Pulse Rate (Hz/kt)
0
1
2
3
4
5
6
7
8
Speed (knots)
0
5
10
15
20
25
30
35
40
45
50

FIG. 2A

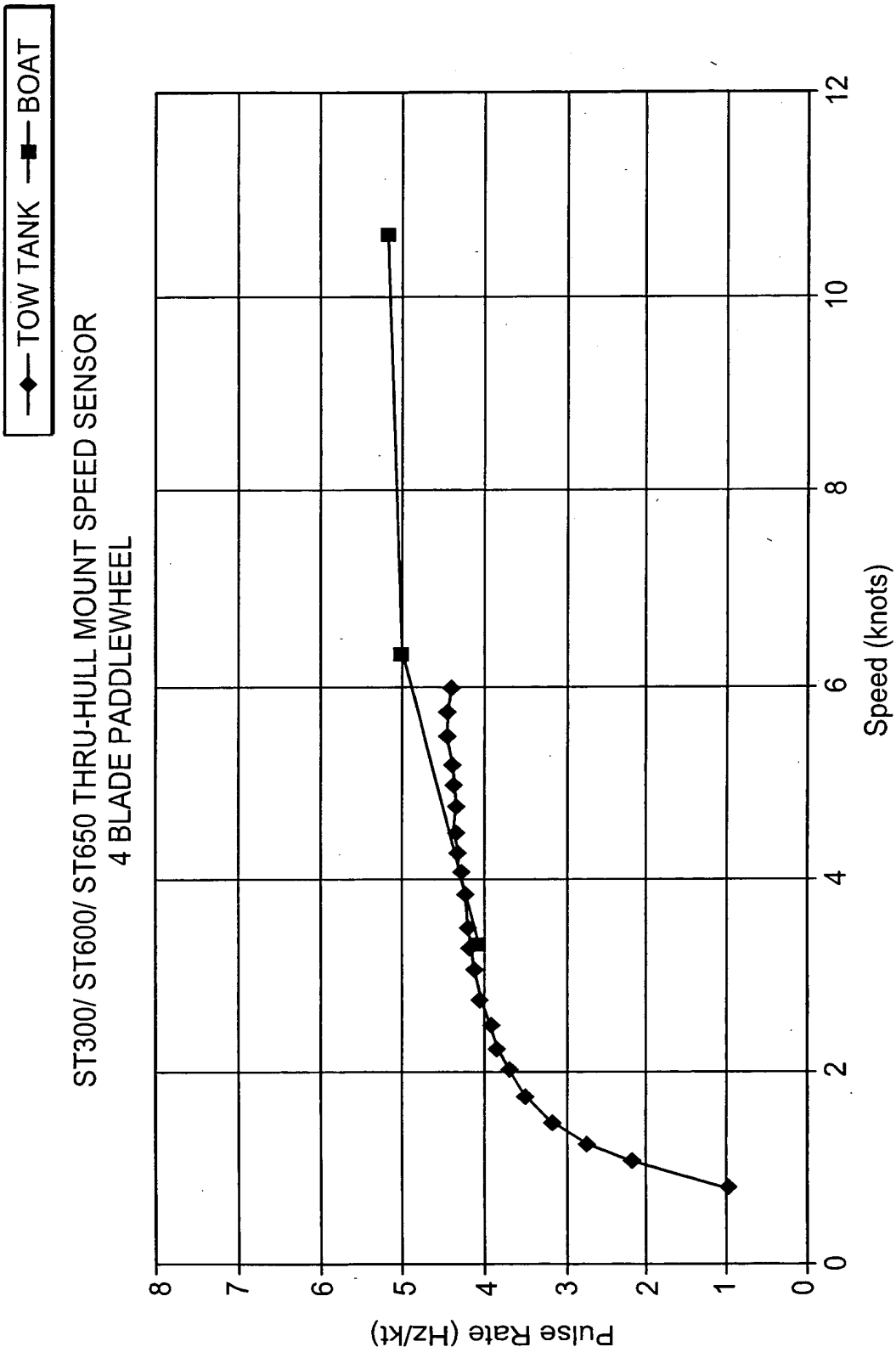

TOW TANK
BOAT
ST300/ ST600/ ST650 THRU-HULL MOUNT SPEED SENSOR
4 BLADE PADDLEWHEEL
Pulse Rate (Hz/kt)
Speed (knots)
0
1
2
3
4
5
6
7
8
0
2
4
6
8
10
12

FIG. 2B

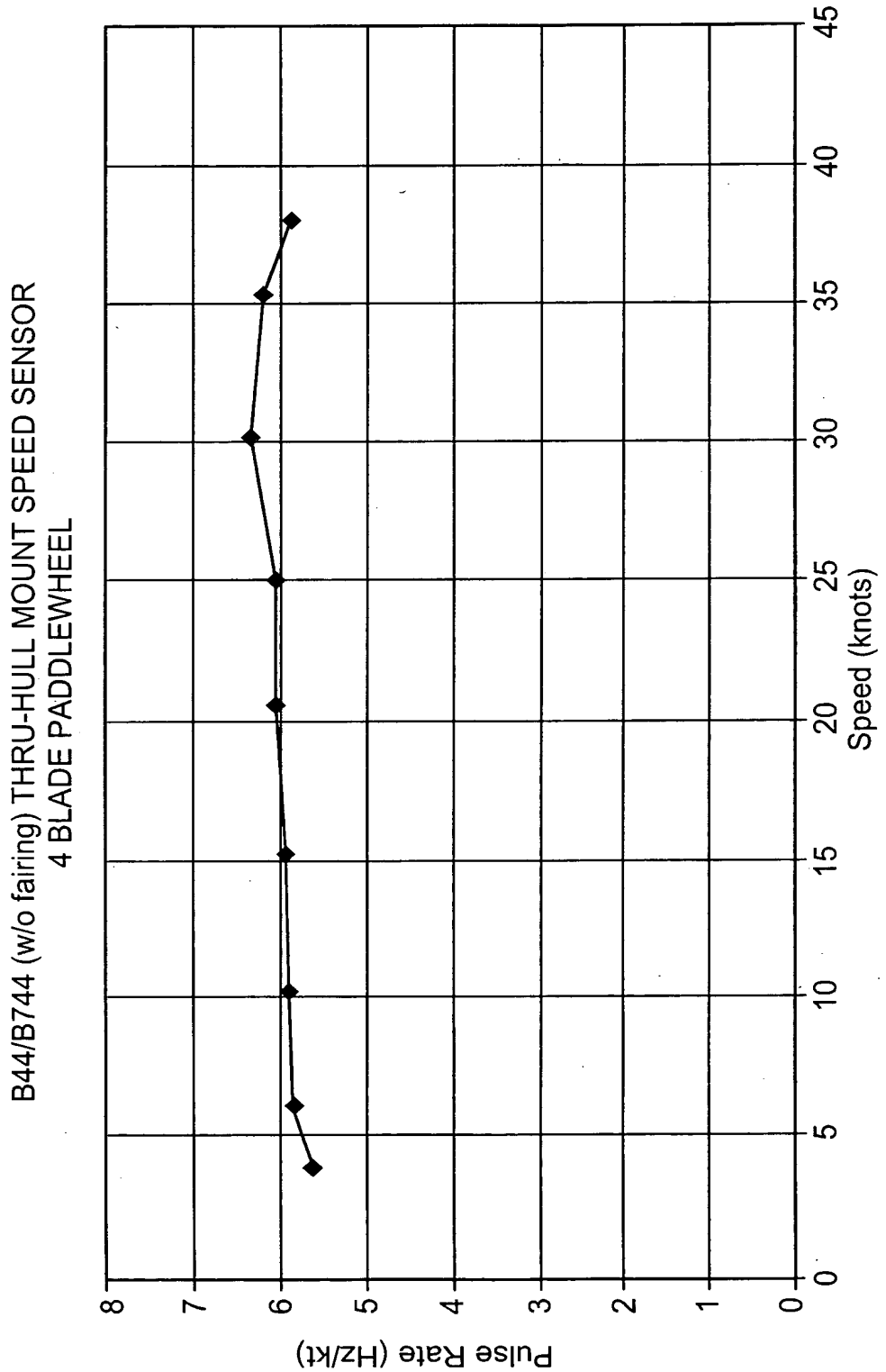

B44/B744 (w/o fairing) THRU-HULL MOUNT SPEED SENSOR
4 BLADE PADDLEWHEEL
Pulse Rate (Hz/kt)
0
1
2
3
4
5
6
7
8
Speed (knots)
0
5
10
15
20
25
30
35
40
45

FIG. 3A

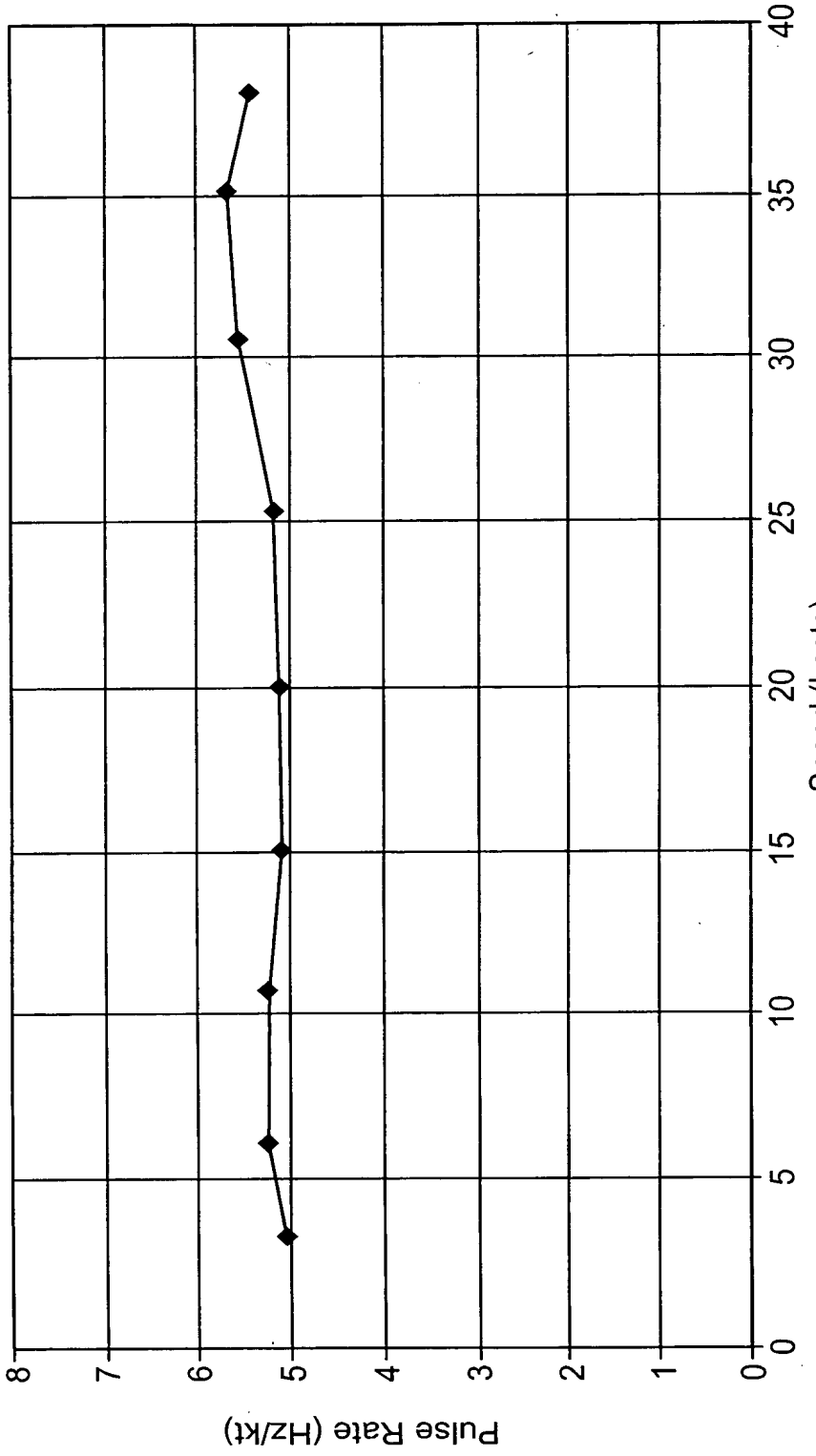

Pulse Rate (Hz/kt)
0
1
2
3
4
5
6
7
8
Speed (knots)
0
5
10
15
20
25
30
35
40
B744 (w/HS fairing) THRU-HULL SPEED SENSOR
4 BLADE PADDLEWHEEL

FIG. 3B

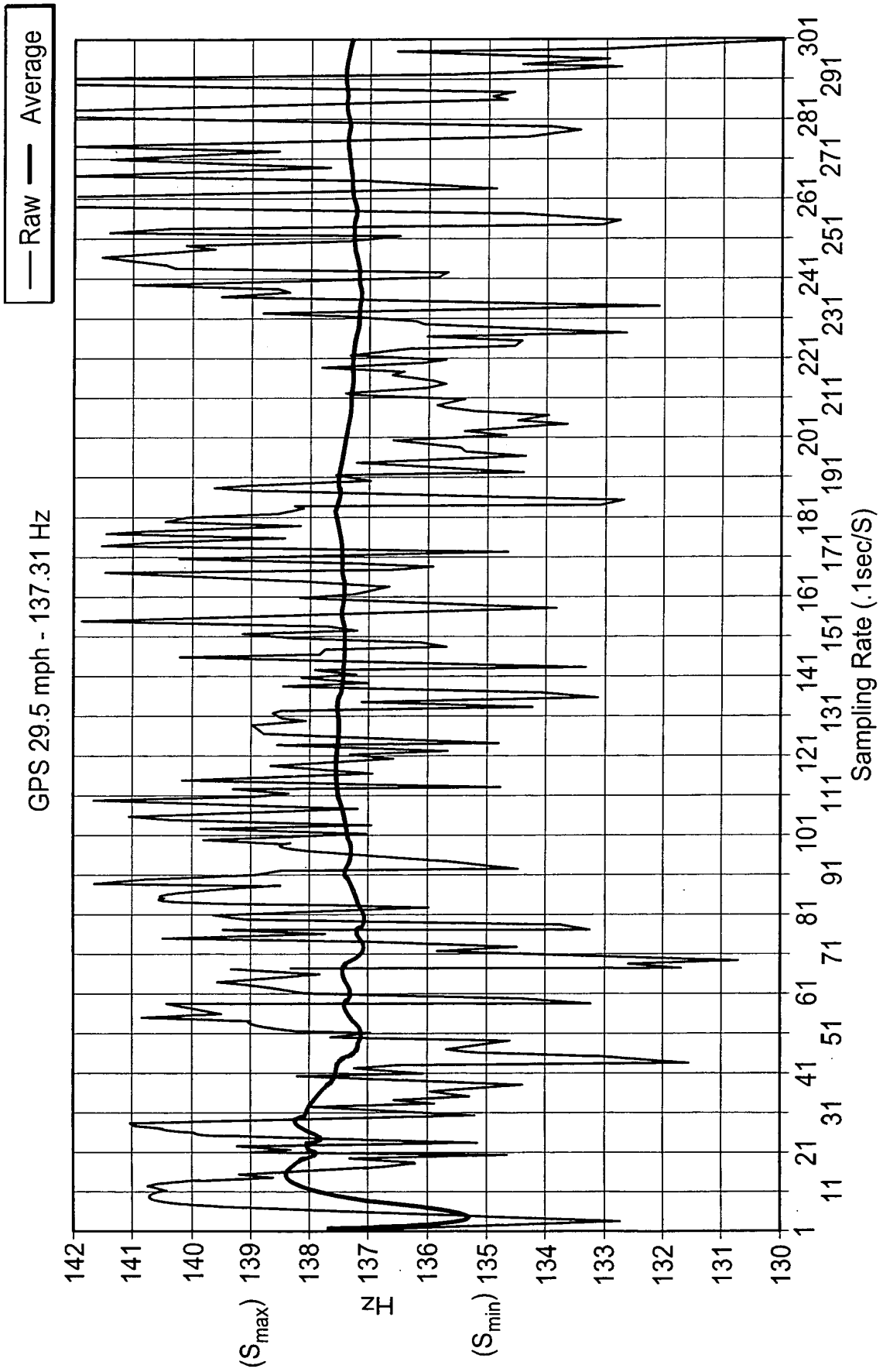

Raw
Average
GPS 29.5 mph - 137.31 Hz
Hz
(S_{max})
(S_{min})
Sampling Rate (.1sec/S)
142
141
140
139
138
137
136
135
134
133
132
131
130
1
11
21
31
41
51
61
71
81
91
101
111
121
131
141
151
161
171
181
191
201
211
221
231
241
251
261
271
281
291
301

FIG. 4

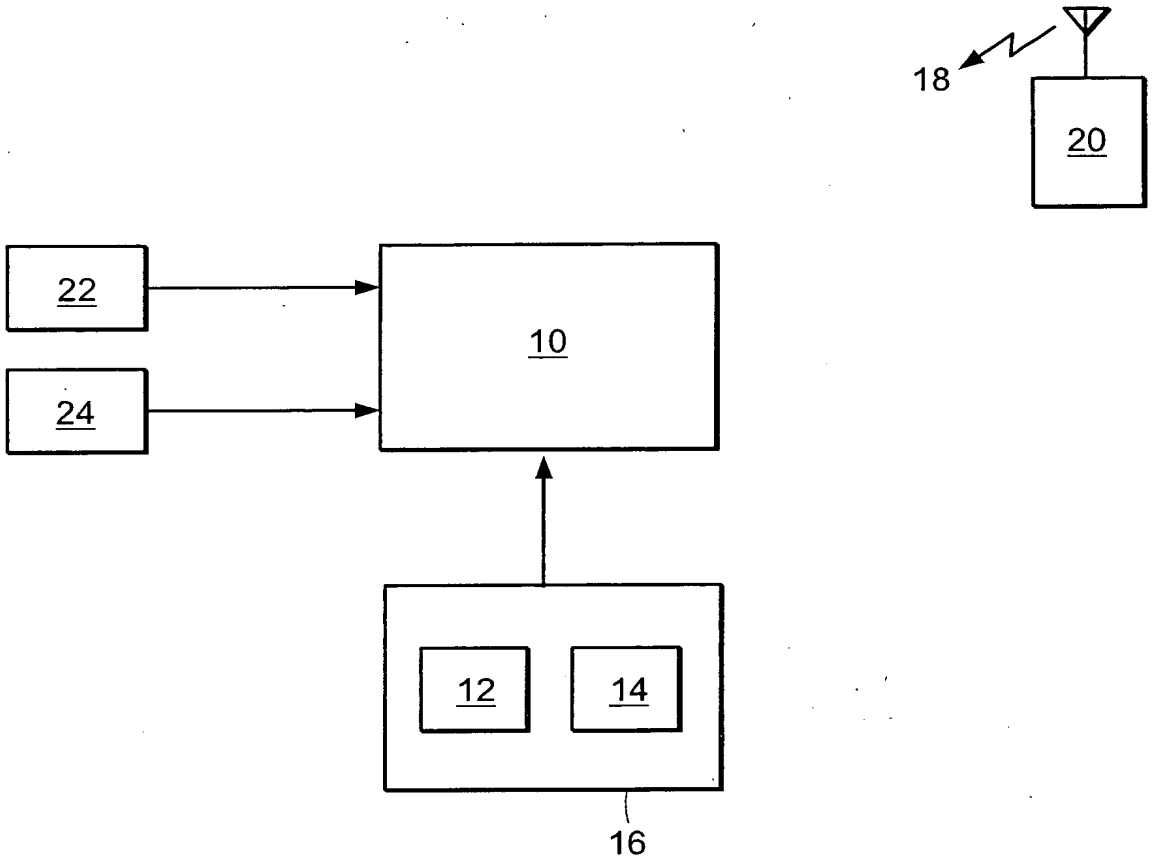
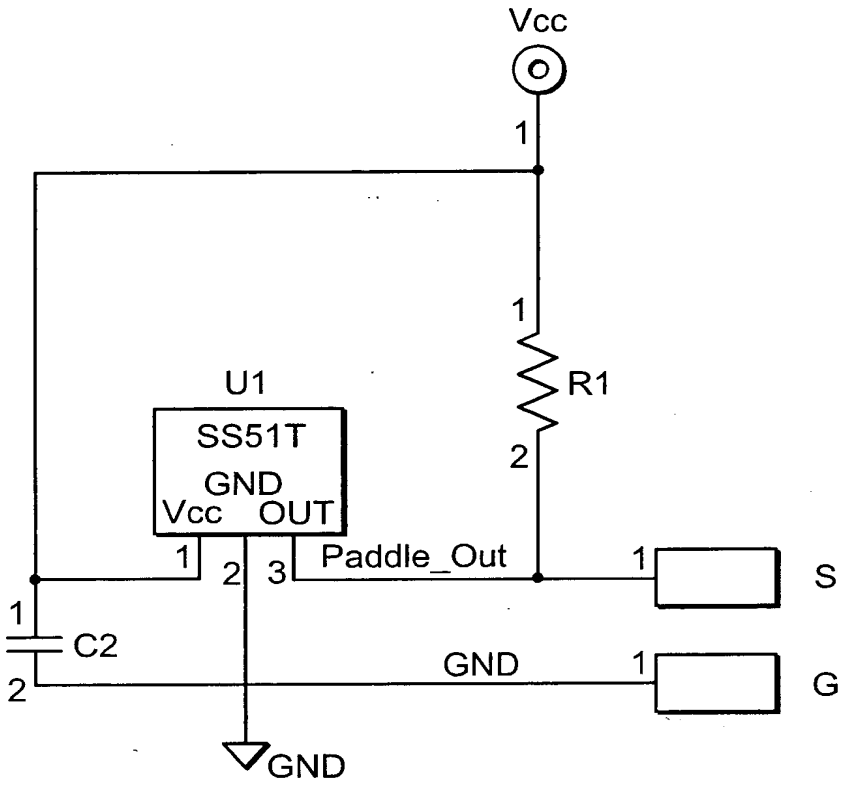
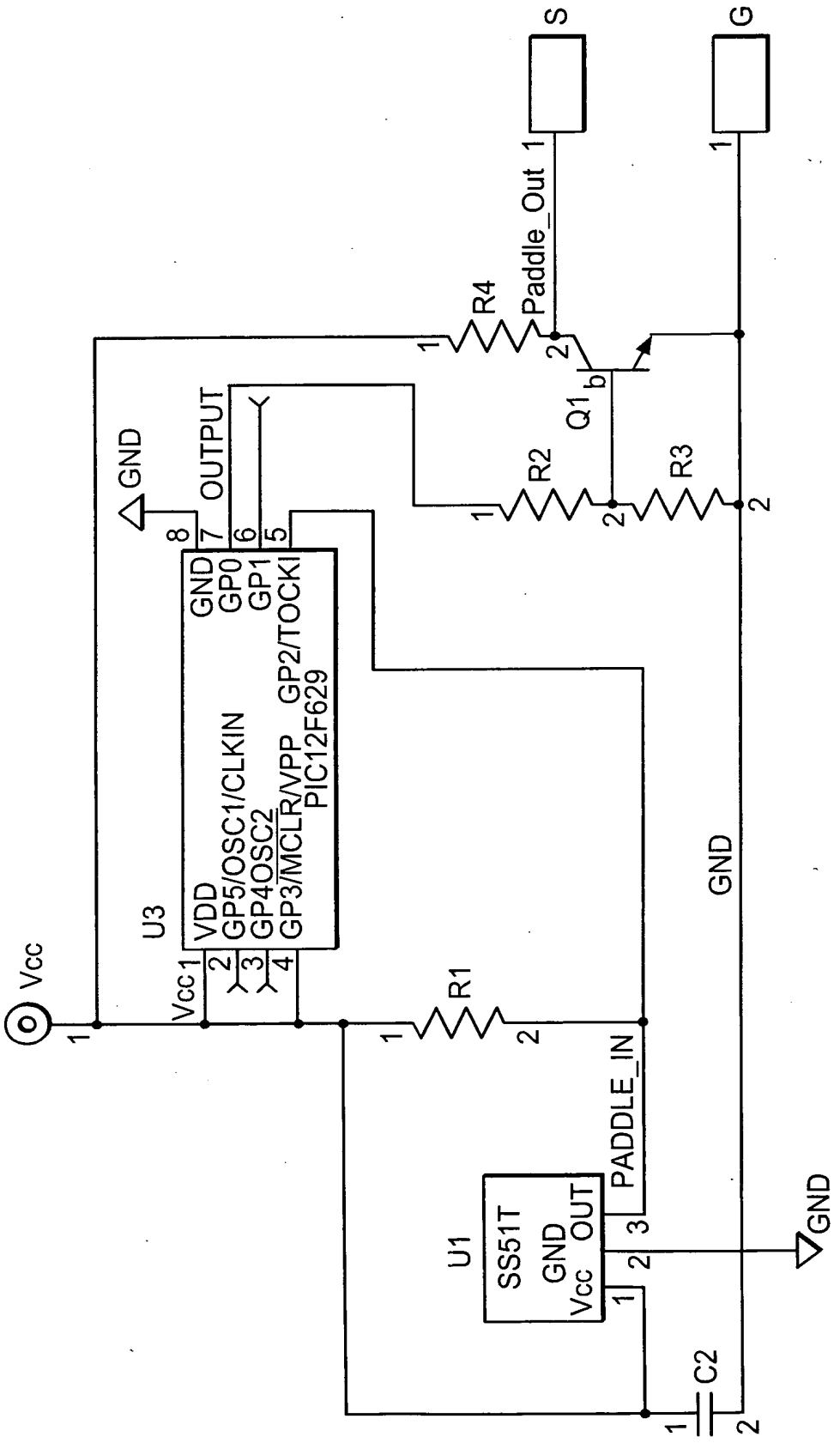


FIG. 5



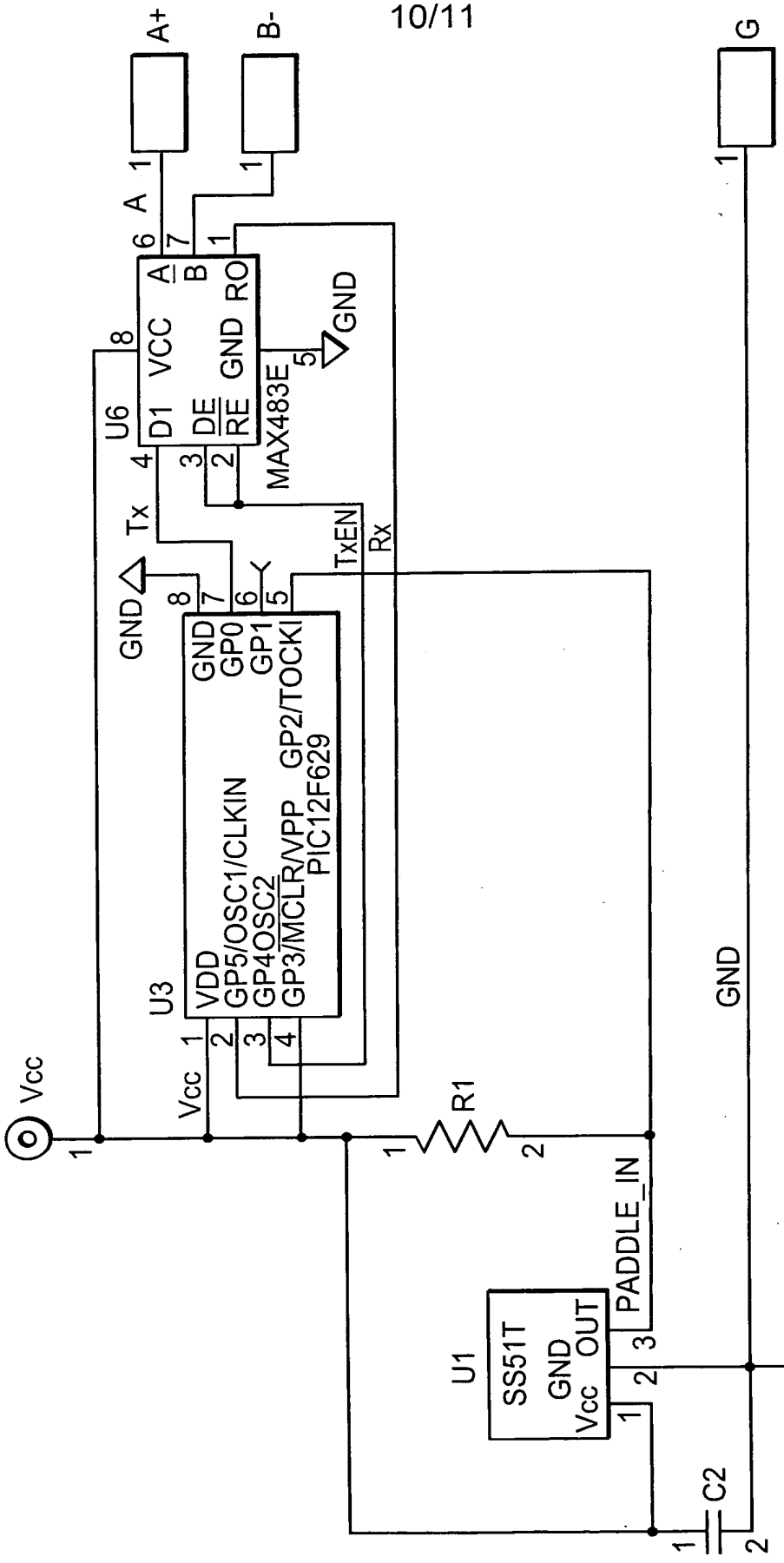
UNCORRECTED PADDLEWHEEL CIRCUIT

FIG. 6A



PADDLEWHEEL CORRECTION CIRCUIT WITH ANALOG OUTPUT

FIG. 6B



PADDLEWHEEL CORRECTION CIRCUIT WITH DIGITAL OUTPUT

FIG. 6C

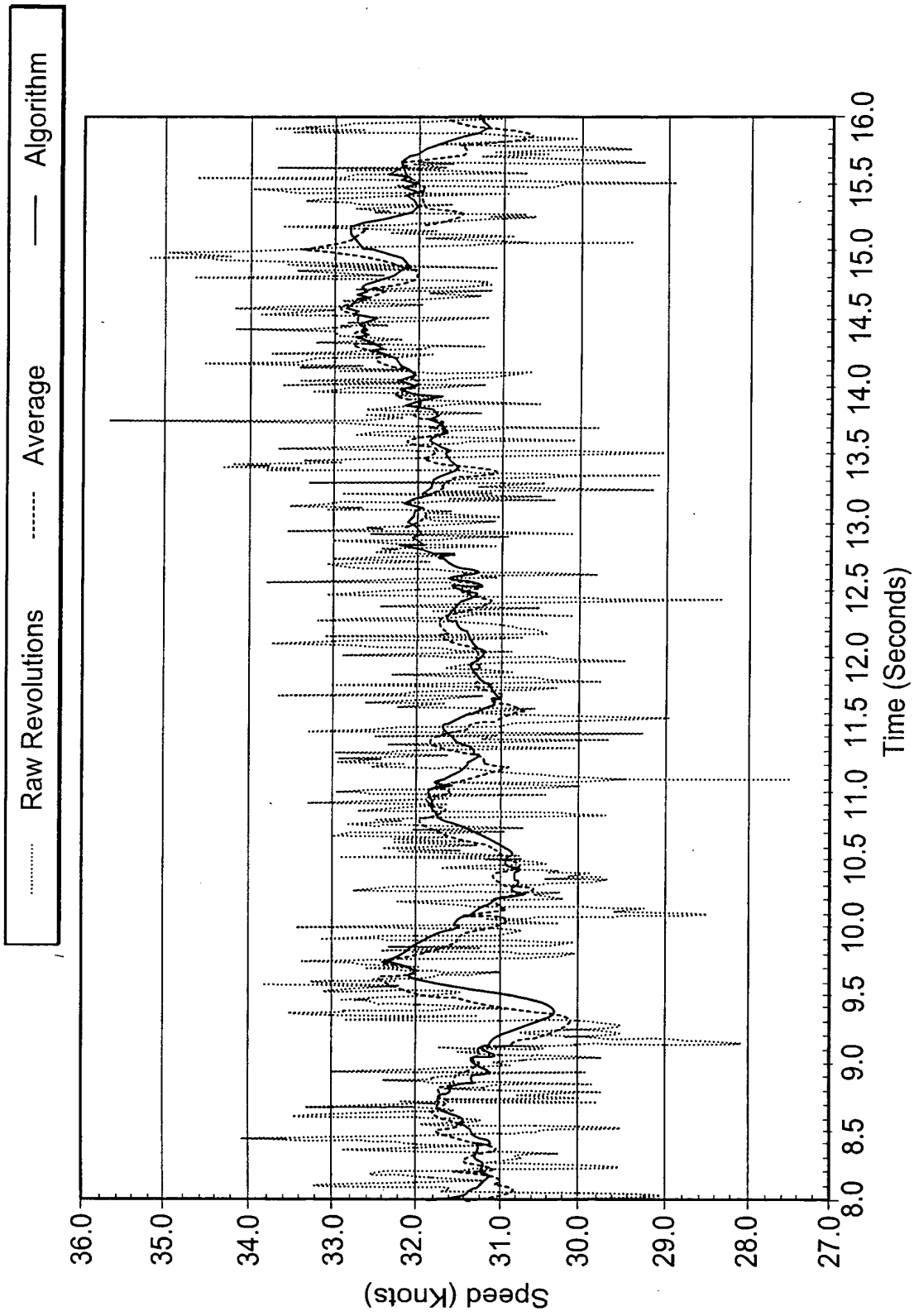

Raw Revolutions
Average
Algorithm
Speed (Knots)
36.0
35.0
34.0
33.0
32.0
31.0
30.0
29.0
28.0
27.0
Time (Seconds)
8.0
8.5
9.0
9.5
10.0
10.5
11.0
11.5
12.0
12.5
13.0
13.5
14.0
14.5
15.0
15.5
16.0

FIG. 7